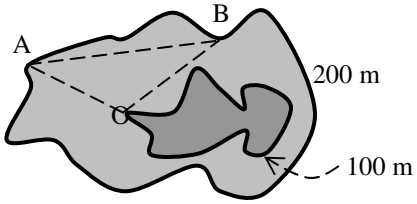
= Year 12 = Geometry&Trigonometry = Worksheet 5

1. Point B is NE of O. Point A is N60°W of O. The angle of elevation of B from O is 55°. The angle of depression of O from A is 60°. Find (a) the angle of elevation of A from O, and (b) the angle of depression of O from B. 	2. Refer to Q1. Find the horizontal distance of (a) A from O, and (b) B from O.
3. Refer to Q1. Find the straight line distance between A and B.	4. Refer to Q1. Find the straight line distance from (a) O to A, and (b) O to B.
5. Refer to Q1. Find the measure of $\angle AOB$.	6. Refer to the contour map in Q1. Calculate the land area (in m^2) enclosed by ΔAOB.
7. Two solid spheres (radius 1 cm) are in contact when they are placed inside a rectangular box such that each sphere touches exactly **5** faces of the box. Find the volume (in cm^3) of the box.	8. Two solid spheres (radius 1 cm) are in contact when they are placed inside a rectangular box such that each sphere touches exactly **4** faces of the box. Find the volume (in cm^3) of the box.
9. Refer to Q8. Calculate the volume of air inside the box when the spheres are in position.	10. Refer to Q8. If the radius of the 2 identical solid spheres inside the box is greater than 1 cm, calculate the value of the ratio, *volume of air inside the box : total volume of the spheres*.
11. Two solid spheres (radius 1 cm) are in contact when they are placed inside a rectangular box such that each sphere touches exactly **3** faces of the box. Find the volume (in cm^3) of the box.	Numerical, algebraic and worded answers. 1. (a) 60° (b) 55° 2. (a) 57.7 m (b) 70.0 m 3. 101.6 m 4. (a) 115.5 m (b) 122.1 m 5. 50.6° 6. 1951 m^2 7. 16 cm^3 8. 23.3 cm^3 9. 14.9 cm^3 10. 1.783 11. 31.4 cm^3